Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Preparation for International	)	
Telecommunication Union World	)	IC Docket No. 94-31
Radiocommunication Conferences	)	

To: The Commission

SUPPLEMENTAL REPLY COMMENTS OF ASSOCIATION OF AMERICAN RAILROADS

The Association of American Railroads ("AAR"), by its undersigned counsel and pursuant to Section 1.415 of the Rules of the Federal Communications Commission ("FCC" or "Commission"), hereby submits these Supplemental Reply Comments in the above-captioned proceeding. These Supplemental Reply Comments address the issues raised in the Supplemental Comments submitted by Leo One USA Corporation ("Leo One") on July 6, 1995. Leo One's Supplemental Comments presented a "sharing study" purporting to demonstrate that the Mobile Satellite Service ("MSS") can share with the land mobile operations below 1 GHz. Leo One also added a request at the end of its Supplemental Comments for an additional MSS uplink allocation at 456-459 MHz.

I. Leo One's Proposal is an Abrupt and Unexplained Departure from its Most Recent Filing and is Contrary to the Allocation Already Made by the Commission for MSS Uplinks

Leo One's allocation request is surprising. It represents a glaring departure from the proposed allocations recommended in the Supplemental Reply Comments that Leo One jointly filed with

other MSS proponents on May 18, 1995.[1] In that Joint Filing, the MSS proponents, including Leo One, proposed frequencies at 420-422, 455-456 and 459-460 MHz for MSS service uplinks.[2] The Joint Filing presented a detailed analysis to support the requested allocation based on the level of usage in the various bands. Now, less than two months later, Leo One has come forward and requested an allocation completely different from that proposed in the Joint Filing without providing any explanation for the abrupt departure. Leo One has provided no support for its proposed allocation of frequencies at 456-459 MHz for MSS service uplinks, and has failed to explain why frequencies that previously were rejected by the authors of the Joint Filing suddenly appear suitable for allocation to MSS.

Moreover, the Commission has already acted in reliance on the Joint Filers' proposals and has adopted them in many instances. Specifically, the Commission proposed to allocate spectrum at 399.9-400.5, 455-456 and 459-460 MHz to MSS uplink use.[3] The Commission based its allocation proposal on a review

---

[1] Joint Supplemental Reply Comments submitted May 18, 1995, by CTA Commercial Systems, Inc., E-Sat, Inc., Final Analysis Communication Services, Inc., GE American Communications, Inc., Leo One USA Corporation, Orbital Communications Corporation, Starsys Global Positioning, Inc., Volunteers in Technical Assistance (hereafter "Joint Filing").

[2] Id. at 2-3.

[3] Preparation for International Telecommunication Union World Radiocommunication Conference, Report in IC Docket No. 94-31 at para. 19, table 1 (June 15, 1995)(hereafter Report).

of the MSS proponents' submissions and on the serious concerns expressed by the existing users of various bands concerning the detrimental impact of additional MSS allocations on their continued operations.[4] Leo One has not presented any new or compelling evidence to warrant a grant of additional spectrum beyond that already proposed in the Commission's Report.

II. Leo One's Proposal Should Be Rejected Because the Railroads Depend on Spectrum at 457 MHz for Critical Coordination of Lead and Slave Locomotives

AAR opposes Leo One's proposal not only for the noticeable absence of any supporting rationale to support its request, but most importantly because the railroads rely on mobile radio systems operating at 457 MHz for the critical purpose of "controlling slave locomotives that are placed within a train to assist the lead locomotive by providing, among other functions, auxiliary starting, pulling, and braking actions."[5] Because the use of slave locomotives distributes power throughout a train rather than locating it at a single forward point, the railroads are able to move longer trains more safely than would otherwise be possible over difficult terrain such as long and steep mountain grades. The radio link, represented by equipment such as the "Locotrol" device manufactured by Harris Corporation, allows the lead locomotive to communicate information that is necessary for the smooth functioning and reliable operation of the train to the unmanned slave locomotive in the mid-section of

---

[4] Id. at paras. 18-20.

[5] 47 C.F.R. § 90.91(c), note 11.

the train. Needless to say, derailments can occur if the forces applied to the train by the lead and slave locomotives are not closely synchronized and coordinated. Any interference with or degradation of this vital communication link between the lead and slave locomotives could result in significant disruption of vital freight movement operations of the nation's railroads and possible and risk to both life and property.

III. Leo One's Study Ignores the Important Safety Role of the Land Mobile Bands, Their Heavy Usage and the Impact of Evolving MSS Services

While the study presented by Leo One purported to demonstrate that sharing is possible between MSS service uplinks and land mobile receivers, it suffers from several serious flaws and, therefore, should not be relied upon. First, it repeated the mistake of prior sharing studies submitted by MSS proponents by ignoring the vital safety role of land mobile radio operations -- such as control of slave locomotives -- in the 456-459 MHz band. Because of the critical safety function performed by these land mobile operations, it is essential that they be protected from interference.

Although the Leo One study relied on dynamic channel assignment technology to support its claim that interference would be "negligible," it ignored the need of certain industries, such as the railroads, for continuously clear channels. As AAR said in its Reply Comments in this proceeding,

> It is precisely the possibility that the "dynamic channel assignment schemes" relied on by such commenters as Leo One could search out open channels

> and insert their messages that poses such a significant threat to railroad safety.[6]

In those Reply Comments AAR also referred to its description of the necessity for clear channels in the context of the Commission's "refarming" proceeding:

> Safety concerns dictate that the frequencies assigned to a given railroad be available for use at all times. The vital nature of communications on railroad channels -- information that could prevent a derailment -- requires that frequency availability be as close to 100 percent as possible...If the channel were not available, the relay of information that would prevent a derailment would be disrupted.[7]

In the case of frequencies used to control slave locomotives, if the moment that an MSS station transmits is the same moment the slave locomotive is being instructed by its telemetry radio link to accelerate or decelerate, the instruction simply would not be delivered as a result of the interference caused by the MSS transmission. The interference in that circumstance could in no way be deemed "negligible." Leo One's claim, therefore, that, "co-frequency sharing between narrowband MSS below 1 GHz systems and land mobile services will allow the MSS...to find clear channels," causes great concern to the railroad industry, especially since Leo One has now targeted frequencies upon which the railroads rely to perform a vital function which has important safety implications.

---

[6] Reply Comments submitted by AAR in IC Docket 94-31 at 8 (filed April 14, 1995).

[7] Comments submitted by AAR in PR Docket No. 92-235 at 16-17 (filed May 27, 1993).

The Leo One study also failed to consider the heavy usage of the land mobile bands. Task Group 8/3 concluded that the existing congestion in the land mobile bands, combined with expected growth, "will make the relevant bands difficult to share between land mobile and the MSS."[8] It is anticipated that the number of land mobile transmitters will experience a major growth as a result of the Commission's decision in the "refarming" proceeding.[9] The existing and expected level of usage in these bands highlights the problems inherent in sharing with MSS.

This knowledge of spectrum usage levels is based on the railroads' experience of over fifty years of utilization of spectrum for communications and electronic systems.[10] In contrast, much of MSS activity is based on predicted operation which will not commence for several years. As Leo One stated in its Supplemental Comments, it is a "pending applicant for a

---

[8] ITU-R TG 8/3, Doc. 8-3/18 at 13 (July 27, 1994).

[9] Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, Report and Order and Further Notice of Proposed Rulemaking in PR Docket No. 92-235 (June 23, 1995).

[10] VHF Communications Usage by U.S. Railroads, Prepared for the U.S. Department of Transportation, Federal Railroad Administration by the U.S. Department of Commerce, Institute for Telecommunications Sciences, 1977 at 8 ("The U.S. railroad industry has, since World War II, evolved a substantial application for communications and other electronic systems that utilize the electromagnetic spectrum." Id.)

mobile satellite service...below 1 GHz system."[11] Leo One has itself conceded that,

> it will take five years to design, finance, construct, launch and fully implement an NVNG MSS system with dozens of satellites, such as proposed by Leo One USA...This means at the earliest, Leo One USA could not begin to provide service until late 1998. It would take at least two years to fully implement all 48 satellites of the proposed Leo One USA system.[12]

By the time Leo One commences operation, the land mobile bands will, based on projections that are grounded on actual past experience, be much more heavily used than they are today -- good reason to avoid allocating them for MSS use.

In addition, Leo One explicitly noted that its sharing study relied on Recommendation ITU-R M. 1039 "as a basis for its analyses."[13] As AAR pointed out in its Reply Comments, any such analysis is seriously deficient because Recommendation ITU-R M. 1039 focussed on short bursty transmissions and did not take into account the likely evolution of MSS services. In this regard, Leo One has itself noted that the second generation of MSS systems will differ from the early MSS services in both nature and range of offerings.[14] For instance, the intended use of MSS for fax transmissions and data transfers does not fall within the

---

[11] Leo One Supplemental Comments at 1, emphasis added.

[12] Leo One Comments at 5.

[13] Supplemental Comments submitted by Leo One in IC Docket No. 94-31 at 3, n.5 (filed July 6, 1995)(hereafter Leo One Supplemental Comments).

[14] Comments submitted by Leo One in IC Docket No. 94-31 at 3-4 (filed March 5, 1995)(hereafter Leo One Comments).

category of short bursty transmissions that formed the basis of the early ITU-R studies.[15] Therefore, Leo One's reliance on ITU-R M. 1039 "as a basis for its [own] analyses," renders the results of its study invalid.

CONCLUSION

The Commission has already proposed to allocate a significant amount of spectrum for MSS use. Not satisfied with that, Leo One has come forward now to claim even more spectrum. Not only has Leo One presented no evidence to support its request for an allocation at 456-459 MHz, but it ignores the fact that other users, such as the railroads, currently depend on that portion of the spectrum to perform functions crucial to safe and reliable operations. In addition, the sharing study it advances suffers from many of the same flaws as prior sharing studies and

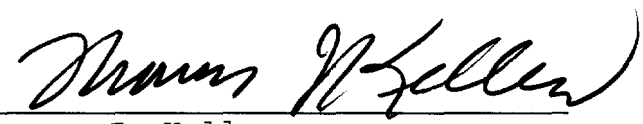
---

[15] Recommendation ITU-R M.1039, Method for Evaluating Sharing Between Stations in the Mobile Service Below 1 GHz and Spread-Spectrum LEO Systems in the Mobile Satellite Services (1994).

is, thus, an unreliable guide. For the foregoing reasons, AAR respectfully urges the Commission to deny Leo One's request for an additional spectrum allocation at 456-459 MHz.

Respectfully submitted,

ASSOCIATION OF AMERICAN RAILROADS

By: 

Thomas J. Keller
Sari Zimmerman

VERNER, LIIPFERT, BERNHARD,
McPHERSON AND HAND, CHARTERED
901 15th Street, N.W., Suite 700
Washington, D.C. 20005
(202) 371-6060

Its Attorneys

July 14, 1995

CERTIFICATE OF SERVICE

I, Deirdre Johnson, hereby certify that on this 14th day of July, 1995, copies of the foregoing "Supplemental Reply Comments of the Association of American Railroads" were mailed, postage prepaid, to the following:

Commissioner Reed E. Hundt
Federal Communications Commission
1919 M Street, NW -- Room 814
Washington, D.C. 20554

Commissioner James H. Quello
Federal Communications Commission
1919 M Street, NW -- Room 802
Washington, D.C. 20554

Commissioner Andrew D. Barrett
Federal Communications Commission
1919 M Street, NW -- Room 826
Washington, D.C. 20554

Commissioner Rachelle B. Chong
Federal Communications Commission
1919 M Street, NW -- Room 844
Washington, D.C. 20554

Commissioner Susan Ness
Federal Communications Commission
1919 M Street, NW -- Room 832
Washington, D.C. 20554

Scott Blake Harris, Esq.
Bureau Chief
International Bureau
Federal Communications Commission
2000 M Street, N.W.
Washington, D.C. 20554

The Honorable Michael Synar
Ambassador to U.S. Delegation to
WRC-95
U.S. Department of State
EB/CIP/SIO - Room 5820
2201 C Street, N.W.
Washington, D.C. 20520

Thomas Tycz
Division Chief
Satellite & Radio Communication Division
International Bureau
Federal Communications Commission
2000 M Street, N.W.
Washington, D.C. 20554

Regina Keeney, Esq., Chief
Wireless Bureau
Federal Communications Commission
2025 M Street, N.W., Room 5002
Washington, D.C. 20554

William E. Kennard, Esq.
General Counsel
Federal Communications Commission
1919 M Street, N.W., Room 614
Washington, D.C. 20554

Ralph A. Haller
Wireless Bureau
Federal Communications Commission
2025 M Street, N.W., Room 5002
Washington, D.C. 20554

Robert McNamara
Wireless Bureau
Federal Communications Commission
2025 M Street, N.W., Room 5322
Washington, D.C. 20554

Cecily Holiday
Deputy Division Chief
Satellite & Radio Communication Division
International Bureau
Federal Communications Commission
2000 M Street, N.W.
Washington, D.C. 20554

William Luther
Branch Chief
Radiocommunication Policy Branch
International Bureau
Federal Communications Commission
2000 M Street, N.W.
Washington, D.C. 20554

Thomas Walsh
International Bureau
Federal Communications Commission
2000 M Street, N.W.
Washington, D.C. 20554

Damon C. Ladson
International Bureau
Federal Communications Commission
2000 M Street, N.W., Room 803
Washington, D.C. 20554

Richard Parlow
National Telecommunications and
Information Administration
U.S. Department of Commerce
14th & Constitution Ave., N.W.
Washington, D.C. 20230

International Transcription Service, Inc.
2100 M Street, N.W.
Suite 150
Washington, D.C. 20037

Peter A. Rohrbach
Julie T. Barton
Kyle Dixon
Hogan & Hartson L.L.P.
555 Thirteenth Street, N.W.
Washington, D.C. 20004
Attorneys for GE American
Communications, Inc.

Robert M. Gurss
Wilkes, Artis, Hedrick & Lane, Chartered
1666 K Street, N.W., #1100
Washington, D.C. 20006
Attorney for APCO

Jolene M. Molitoris
Administrator
Federal Railroad Administration
U.S. Department of Transportation
400 Seventh St., S.W.
Washington, D.C. 20590

Jeffrey L. Sheldon
General Counsel
UTC
1140 Connecticut Ave., N.W.
Suite 1140
Washington, D.C. 20036

Leslie A. Taylor
Leslie Taylor Associates
6800 Carlynn Court
Bethesda, MD 20817-4302
Attorney for E-SAT, Inc.

Robert A. Mazer
Rosenman & Colin
1300 19th Street, N.W., Suite 200
Washington, D.C. 20036
Attorney for Leo One USA Corp.

Barry Lambergman
Manager, Satellite Regulatory Affairs
Motorola, Inc.
1350 I Street, N.W., Suite 400
Washington, D.C. 20005

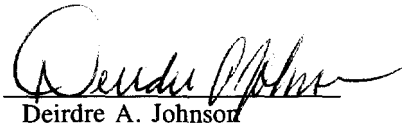
Paul R. Rodriguez
Stephen D. Baruch
Leventhal, Senter & Lerman
2000 K Street, N.W., Suite 600
Washington, D.C. 20006
Attorneys for Starsys Global Positioning

William R. Lye
President
National Spectrum Managers Association, Inc.
RR 7, Box 87
Fulton, NY 13069

George M. Kizer
Chairman
Fixed Point-to-Point Communications Section
Network Equipment Division of the
Telecommunications Industry Association
2500 Wilson Blvd., Suite 300
Arlington, VA 22201

Robert J. Miller
Jeffrey D. Jacobs
Gardere & Wynne, L.L.P.
1601 Elm Street, Suite 3000
Dallas, TX 75201
Of counsel NSMA and TIA

Warren Richards
U.S. Department of State
2201 C Street, N.W.
Washington, D.C. 20520



Deirdre A. Johnson